FACT SHEET

Proposed Modification of Underground Injection Control (UIC) Area Permit AK-1I003-A
for the Construction and Operation of Class I Non-Hazardous Industrial Waste Injection Wells
at the Alpine Oil and Gas Development of the Colville River Unit on the North Slope of Alaska

U.S. Environmental Protection Agency, Region 10
Ground Water Protection Unit, OW-137
1200 Sixth Avenue
Seattle, Washington 98101

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Introduction

ARCO Alaska, Inc. holds an Underground Injection Control (UIC) permit application for the construction and operation of up to three Class I non-hazardous industrial waste injection wells at the Alpine Field in the Colville River Unit on the North Slope of Alaska. The permit is effective until February 3, 2009, and authorizes ARCO to inject all of the non-hazardous waste fluids generated at the Alpine Field into the naturally saline Ivishak and Sag River Formations at depths of about 8500 to 9500 feet below the land surface.

Public Comment

Peer review comments were sought from the Alaska Department of Environmental Conservation (ADEC) and the Alaska Oil and Gas Conservation Commission (AOGCC) in the development of the draft permit and this fact sheet. EPA is now requesting public comment prior to modifying the permit. Persons wishing to comment on the draft permit may do so in writing by January 24, 2000. All comments should include the name, address, and telephone number of the person making comment, a concise statement of the exact basis of any comment, and the relevant facts upon which it is based. All written comments and requests should be submitted to EPA at the above address to the Manager of the Ground Water Protection Unit or via electronic mail to partee.grover@epa.gov After January 24, 2000, EPA may finalize the modification as drafted if no substantive comments are received during the public notice period.

Summary of Proposed Action and Permit Conditions

The permit limits injection to the Ivishak and Sag River formations and requires injection be through tubing and a packer "installed in accordance with Appendix F of the permit application." That appendix indicated to EPA that the packer would be, at most, a few hundred feet above the injection interval. For a variety of reasons, ARCO installed the packer nearly 1100 feet above the injection interval. Thus, the Agency has been unwilling to authorize full operation of the facility.

EPA's concern, as set forth in letters dated April 30 and May 4, 1999, was that several hundred feet of casing below the packer would be exposed to injection pressures and the corrosive and erosive effects of the injectate. While underground sources of drinking water (USDWs) are not endangered by this situation - EPA has determined that there are no USDWs in the area - ARCO must still ensure that fluids are only injected into the authorized intervals. This includes routinely demonstrating the mechanical integrity of the pipe exposed between the packer and the perforations.

At EPA's request, ARCO assessed several options including removing and repositioning the packer, extending the tailpipe, and significantly enhanced monitoring of the exposed casing. ARCO has requested and EPA proposes to approve the last of these options.

Option 1: Repositioning the packer. This would require that the existing packer be drilled out and the tubing removed and reinstalled. This option would involve considerable time and expense. Also, there is some danger to the casing inherent in drilling out the packer at this depth.

Option 2: Extending the tailpipe. If the tailpipe were extended, that portion of the annulus below the packer and above the bottom of the tailpipe could be filled with a lighter-than-water, noncorrosive fluid. However, standard mechanical integrity tests of the casing could still not be performed and access to the casing for other tests of corrosion and erosion would require removal of the tailpipe. ARCO was also very concerned that the tailpipe could easily fall into the hole during operations. A "lost" 600-800 feet of tailpipe would almost certainly crumple and the well would be rendered unusable.

Option 3: Enhanced monitoring. This option more directly addresses the concerns raised by EPA at the outset yet avoids the significant expenses and risks involved in the other two options. ARCO will be required to annually perform a caliper survey of the casing between 8550' TVD and 25' below the tubing tail. The top of the current perforations are at 8650' TVD. The packer is set at 7990' TVD and the tubing tail extends only about 70' belw the packer. A standard annulus pressure test (SAPT) will be required every four years to confirm the results of the caliper surveys and the annual radioactive tracer surveys. Pressure testing will require setting a temporary packer.

EPA contacts for further information are Grover Partee at (206) 553-6697 or Jonathan Williams at (206) 553-1369.